

THE CONDOR

A Magazine of Western
Ornithology



Volume XXVIII

November-December, 1926

Number 6



COOPER ORNITHOLOGICAL CLUB

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A Magazine of Western Ornithology

Published Bi-monthly by the Cooper Ornithological Club

Entered as second-class matter May 15, 1925, at the post-office at Berkeley, California,
under Act of Congress of February 28, 1925, Section 412, paragraph 4.

Issued from the Office of THE CONDOR, Museum of Vertebrate Zoology, Berkeley, California.

SUBSCRIPTION RATES

Three Dollars per Year in the United States, payable in advance.

Fifty Cents the single copy.

Three Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

COOPER ORNITHOLOGICAL CLUB

Dues are payable in advance on January first for the calendar year: Three Dollars per year for members residing in the United States; Three Dollars and Twenty-five Cents in all other countries. Members whose dues are paid receive THE CONDOR without additional charge.

Send manuscripts for publication to the Editor, J. GRINNELL, or to the Associate Editor, H. S. SWARTH, Museum of Vertebrate Zoology, University of California, Berkeley, California.

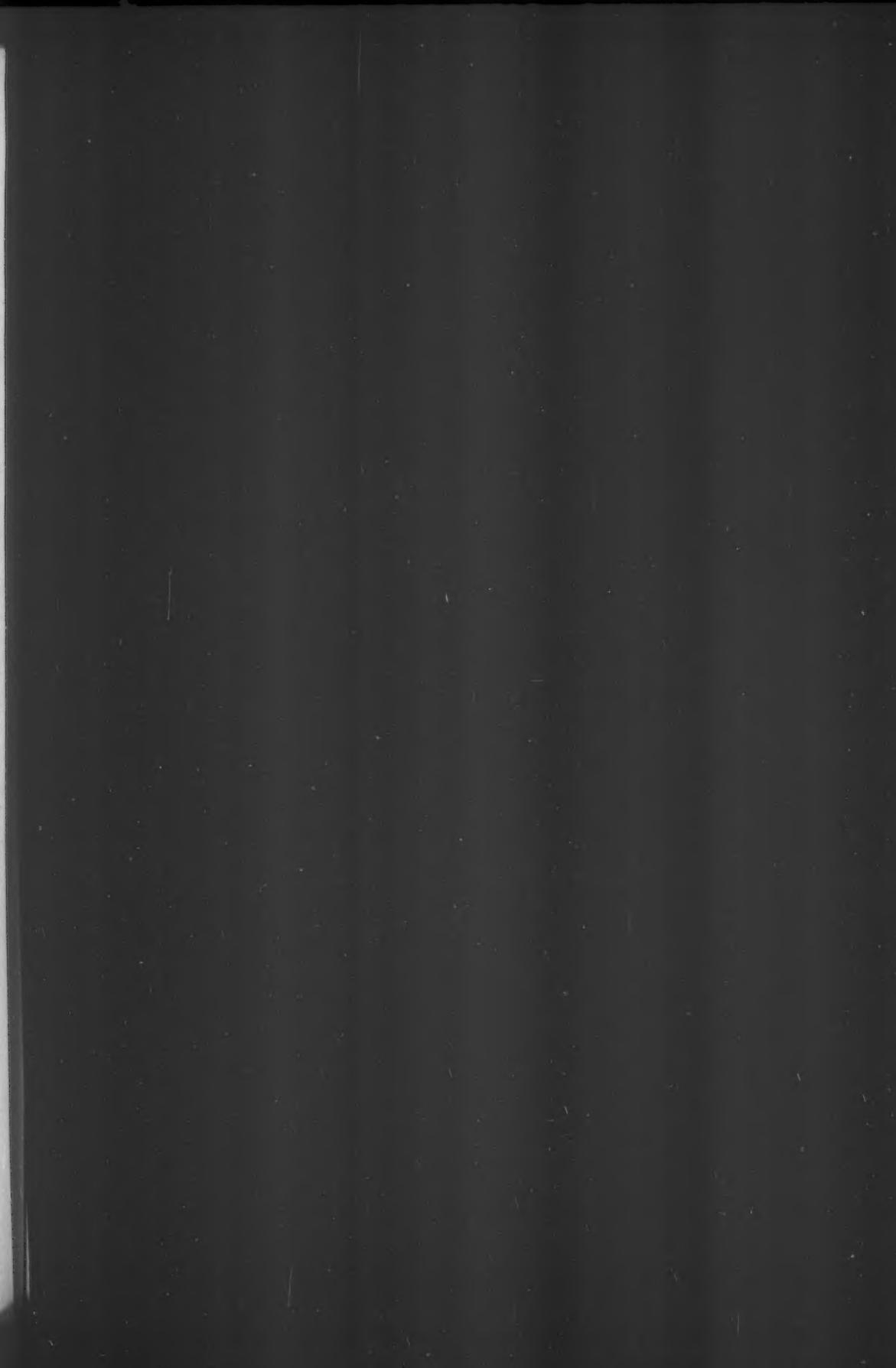
Send dues, subscriptions, orders for back numbers of THE CONDOR and for the PACIFIC COAST AVIFAUNA series to the Business Managers, W. LEE CHAMBERS, Box 123, Eagle Rock, California, or HARRY HARRIS, Box 123, Eagle Rock, California.

Endowment Secretary, D. R. DICKEY, 514 Lester Avenue, Pasadena, California.

Issued November 15, 1926

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JAMES HEPBURN, A LITTLE KNOWN CALIFORNIAN ORNITHOLOGIST

By HARRY S. SWARTH

IN the course of some recent house cleaning in a storeroom in the Department of Agriculture of the University of California, there were unearthed two old manuscript note books pertaining to birds, which have since come into my hands. Their rescue was effected by Prof. T. F. Tavernetti, of the Department of Agriculture, who turned the books over to the Museum of Vertebrate Zoology, where they now are. The history of these note books is unknown; there is no information as to when or how they came into the possession of the University.

One of the two books (8½ inches by 5½ inches in size) is a catalogue of birds collected, many of them in California, the specimens numbered serially from 1 to 1436, and covering the period from May 6, 1852, to January 17, 1868. The other book (8 by 6¾ inches) contains a series of written accounts of various species of birds and is evidently based upon the collection listed in the catalogue. In neither volume is there any signature of the author, nor any other direct suggestion as to who the writer could be. The names of many individuals are mentioned, mostly in acknowledgment of aid in securing specimens, but it apparently never occurred to the owner of the books to put his own name on record. Both volumes are in an excellent state of preservation. They are strongly bound, the paper is white and unstained, and for the most part the ink is clear and unfaded.

It is, of course, a matter of considerable interest to us, working in present day ornithology in California, to know who it was who was making extensive collections of birds, with carefully written observations upon the species, in this state so long ago. The most promising clue to the problem, next to the period at which the work had been done, was to be found in the list of localities visited. These were all on the Pacific Coast, ranging from Los Angeles to Sitka, and with the bulk of the collecting centering about San Francisco and Victoria. The names of various old-time Californian ornithologists suggested themselves, such as Cooper, Gambel, Heermann, and others, but of all these men enough was known of their travels to be an assurance that none of them had followed the itinerary covered in this notebook.

In the original description of *Leucosticte littoralis* Baird (Trans. Chicago Acad. Sci., 1, 1, 1869, p. 318), the bird then and since known as the Hepburn Rosy Finch, a statement occurs that came into my mind as soon as I had glanced over the notebooks, as perhaps supplying the solution of the question. This is a reference to the collector of the specimen which was afterwards selected as the type of this form, taken at Fort Simpson "by Mr. Hepburn, an eminent English naturalist; long time resident at San Francisco and Victoria."

The next step was to consult certain old government publications which contained lists of specimens of birds, and a pertinent entry was found in a "Catalogue of the aquatic and fish-eating birds exhibited by the United States National Museum" [at the Great International Fisheries Exhibition, London, 1883], by Robert Ridgway. Under *Aphriza virgata* (p. 146) a specimen is listed as follows: "♀ juv. San Francisco, California, September 11, 1856; J. Hepburn." In the notebook, a specimen of Surf-bird is listed under exactly corresponding data, and it is, furthermore, annotated as "Sent S. I." This, in itself, seems conclusive evidence as to the author of the notebooks.

Through the assistance of Dr. Alexander Wetmore, Assistant Secretary of the Smithsonian Institution, Dr. T. S. Palmer, of the Biological Survey, and Mr. J. H. Riley, of the United States National Museum, I have been able to gather a little information as to the relations of Hepburn to the Smithsonian Institution and to collect further corroborative evidence regarding his ownership of the notebooks in question. Hepburn was in correspondence with Baird, who was then Assistant Secretary of the Smithsonian Institution, and he sent to Washington many specimens of birds. Mr. Riley has supplied me with a list of birds received from Hepburn, compiled from the records of the National Museum (the birds themselves in many cases are not to be found; of some there is record of their disposal elsewhere), and for the most part the data pertaining to these specimens agree so closely with corresponding entries in the notebooks as to remove any possible doubt as to Hepburn being author of these records.

Dr. Wetmore kindly sent me a letter written to Baird by Hepburn, from San Francisco, September 19, 1859. This was a disappointing exhibit, in a way, for the sprawling, careless writing of this epistle bears at first glance no resemblance to the usually neat and closely written pages of the notebooks. However, careful inspection of the latter discloses different types of writing in different places. The same letters, or combinations of letters, are formed in widely different ways on different pages. Altogether, I receive the impression that the writer is holding himself in and forcing himself to write carefully. In places, especially in the book containing general accounts of the species, there are lapses into an extremely hasty scrawl. I am no handwriting expert and can not give a positive statement that letter and notebooks were written by the same hand. They are very unlike at first glance, but I believe may have been the product of the same writer. At any rate, however the notebooks were written, there can be no doubt that they pertain to the Hepburn collection.

His system of numbering specimens is complicated by the fact that when a skin left his hands the corresponding number in the notebook was then regarded as vacant, to be filled by a later taken specimen. I was at first startled by an entry, doubtless due to this system, of a Hammond Flycatcher on a page headed 1854, four years before the species was discovered.

The following scanty biographical notes concerning Hepburn were supplied me by Dr. T. S. Palmer: "James Hepburn was born in Scotland in 1811 and died in Victoria, B. C., April 16, 1869. He was educated as a barrister but emigrated to the Pacific coast where he resided at San Francisco and Victoria. He collected seeds of conifers for some English horticultural society and also, I believe, made collections of shells and some other natural history specimens, including the type of the bird named in his honor."

I have been able to find but one published contribution from Hepburn's pen. In the *Ibis* for 1869 (pp. 126-127), the same volume that contains a notice of his death, there is a brief "communication" regarding the identity of a "booming swallow", ascribed to North America by another writer. Editorial comment that instead of a swallow the bird was probably a snipe, called forth Hepburn's statement (undoubtedly

correct) that the travellers' "booming swallow" was really the Nighthawk (*Chordeiles virginianus*). Although he published nothing himself, his ability to write is demonstrated in one of his notebooks, which, in fact, has the appearance of being prepared as preliminary to a book on western American birds. As regards his ability as a collector and observer, we have the following statement from an excellent judge, Robert Brown, as given in the preface to his "Synopsis of the Birds of Vancouver Island" (Ibis, 1868, p. 416): "I received much assistance from my friend Mr. James Hepburn, a gentleman who has spent many years in collecting the birds of the North Pacific, and whose knowledge is only equalled by his liberality in imparting it to his less fortunate brother naturalist. His princely (for no other term will designate it) collection is now in San Francisco, and I trust that he will by-and-by favour us with an extended account of North-Pacific ornithology; but in the meantime this synopsis, which owes all that is most original in it to his notes, may stand as a contribution to zoogeography, which can alone proceed on a sure basis by the collection of local faunas."

Some time after proving to my own satisfaction, in the round-about way outlined above, that Hepburn was the author of the notebooks here described, it was drawn to my attention that he is quoted over and over again, and at some length, in Baird, Brewer, and Ridgway's "A History of North American Birds" (1874). Comparison of the published quotations with notebook entries discloses such agreement of facts stated, and even of wording, as to make it seem likely that this very notebook was in the hands of one of the authors of the work cited. For example, in the account of the White-bellied Swallow (*loc. cit.*, vol. 1, p. 347) there is an account, seven or eight lines in length, describing a nest placed on the yard-arm of a ship, and this description, with hardly the change of a word, appears also in the notebook account of that species.

What became of Hepburn's collection I do not know. His notebook catalogue contains 1436 entries, and, due to his peculiar system, some numbers represent several specimens each. A few skins went to the Smithsonian Institution, and there are entries of some that went elsewhere, notably a good many to "Sir W. Jardine", but it would seem that the bulk of his collection was intact at the time of his death.

Perhaps the main interest attaching to the notebooks is the opportunity of tracing Hepburn's travels in the west. The first entry in his catalogue is dated at Martinez, California, May 6, 1852. During each of the following eight years, until July 21, 1860, there are numerous entries from Californian localities, implying continuous residence at or near San Francisco, though there are gaps of time long enough to have permitted of short trips as far as Victoria. Localities mentioned include Benicia, Oakland, Pulgas Ranch (San Mateo County), Twelve-mile House (San Jose Road), San Mateo, Pacific Beach, Sausalito, Half Moon Bay, Santa Clara, and San Bruno, in the San Francisco Bay region. There were also trips to the Sierras, such as to Grass Valley, to Bear River, Placer County, and to the "Pine Tree Mines", Mariposa County.

On November 5, 1860, is the first entry from British Columbia, at Nanaimo. He remained in the colony until July 20, 1861, collecting at points near Victoria (Esquimalt, San Juan Island, and Saanich), and on the west coast, at Somass, Alberni Canal, and at Barclay Sound. June 5 to 16 was devoted to a trip to Smith's Island, Bird Rock, and Williamson's Rock, Washington Territory. From August 12 to October 15 he was at, or near, Fort Colville, Washington Territory. November 28 found him back in California, where he remained until March, 1862.

In April he returned to Victoria, and we find entries from various points thereabout: from Bird Rock and Smith's Island, Washington Territory, early in June; Barrier Island, Haro Straits, June 25; and about Victoria until July 20. From

August 28 to September 8, five specimens are listed from the "Russian Possessions", at Sitka. Then, September 26 to 27 he was at Fort Simpson, and October 8 to 26 in the vicinity of Fort Rupert, at the north end of Vancouver Island. December 17 he was back in Victoria.

During 1863 he seems to have been at or near Victoria, with one trip to Fort Rupert, most of the time until at least the middle of December. There is a single California record interpolated, of a Virginia Rail collected at Twelve-mile House, San Jose Road, April 22, which may indicate a hurried trip to San Francisco. At least such a trip would not conflict with the notebook entries. December 31, he was at San Francisco once more.

Early in 1864 there are numerous entries from the San Francisco Bay region up to April 2. The scene of activities then shifts again to British Columbia. Collecting was carried on about Victoria during May, June, and July. Then, abruptly, we find him in the interior of the mainland, at Lac La Hache, September 6-9, at Soda Creek, September 13, at Richfield, September 20-23, and at Alexandria, October 1. The next entry is from near Victoria, November 1, and there are others from there until December 31.

In 1865, entries begin in the San Francisco Bay region March 27 and continue there until the end of June. He was in Victoria again October 1-3, and back to San Francisco by November 13. In 1866, we find two pages of entries from Los Angeles, comprising a series of "marsh blackbirds" shot March 21-23. He was again in San Francisco in April, and continuously until the latter part of August. On December 10 he was in Victoria. In 1867, he was in Victoria throughout the year save for trips to islands off the coast of Washington in June and again in the fall (October 22 to November 3). The last entry in the notebook is for January 17, 1868, but this fills the book, and entries may have been continued in another volume.

There are, naturally, many items of decided interest in these notebooks, far too many for repetition here. One or two such may, however, be cited as examples.

Hepburn made two trips to the Farallon Islands, June 10 to 16, 1854, and again June 19 to July 5, 1859. On the first trip not many entries were made, but on the second trip fifty-seven specimens were catalogued, not at all a bad showing, considering that they were all water birds. They are, with one exception, species that are known to be abundant on the islands at the present time. The exception is the Rhinoceros Auklet (*Cerorhinca monocerata*), called by Hepburn the Horned Guillemot. This is of especial interest in view of the facts regarding the previous occurrence of this species on the Farallones recently brought to light by Grinnell (Condor, vol. 28, 1926, pp. 37-40). Seven specimens are listed in his catalogue, six young birds and one adult. They are all entered as "taken from the nest", and from the manner of entry (two young each from nests nos. 1 and 2, and the adult and two young from nest no. 3) the inference is drawn that he found two young constituting a brood in this species. On June 29, 1865, there are entries of two Brandt Cormorants from the Farallones, but they are annotated as killed by "one of the men". It seems likely that they were brought from the Farallones to Hepburn in San Francisco, and that he himself was not on the islands at that time.

One of the notebooks contains an important comment upon an occurrence of the Burrowing Owl on Vancouver Island, as follows: "On arriving at Fort Rupert in 1863, I found a few birds which had been shot there and left for me by my friend Mr. Moffatt, among which was an owl unquestionably the *A. hypugaea* . . . I was not previously aware that any burrowing owls had ever been seen in Vancouver Island." This specimen, if it was preserved, is not entered in his catalogue. It is mentioned in Cooper's Ornithology of California (1870, p. 438, note).

It was disappointing to me to find no reference in Hepburn's notes to the specimen of Rosy Finch supposed to have been taken by him at Fort Simpson, and serving as the type of *Leucosticte tephrocotis littoralis*. Incidentally, it may be said that Fort Simpson, at sea level, is a curious place for this bird to have been found, save perhaps in midwinter. I doubt if it is anything but rare there even at that season, and Hepburn was at Fort Simpson in September.

Judging from some of his written accounts of different species of birds, it may be said that Hepburn possessed more than ordinary ability in describing what he had observed, so that in his failure finally to publish any of the results of his studies of western birds we have been deprived of what would have been a valuable and eminently readable contribution to our knowledge of the ornithology of the Pacific coast in early days.

There may be people in England or Scotland who have knowledge of Hepburn's personal career, and also of what became of his collection, but in this country, heretofore, the attachment of his name to a species of bird and a few scattered references in literature were all that saved it from oblivion.

Dickens' story of the Haunted Man centers largely about the sentiment inscribed below the painting of the founder of the institution in which the story is laid, "Lord, keep my memory green." It is a sentiment that appeals to everyone; it is what we all wish. That a man like Hepburn should die, leaving so little trace of the excellent work he evidently was carrying on, was a most lamentable ending. For years past I had wondered about this man, this "eminent English naturalist, long time resident at San Francisco and Victoria", who vanished so completely, so far as American ornithology is concerned, and it seemed a peculiar piece of luck, to me, that his notebooks should have fallen into my hands. I feel grateful to have been the means, in some measure, to aid in keeping green the memory of a man who assuredly deserves such remembrance but who has been well-nigh forgotten by the bird lovers who came after him.

Museum of Vertebrate Zoology, Berkeley, California, March 22, 1926.

STUDIES ON 1170 BANDED HOUSE FINCHES
WITH ONE ILLUSTRATION AND ONE TABLE

By HAROLD MICHENER
AND
JOSEPHINE R. MICHENER

THE PERIOD covered by this report is from November 2, 1924, to March 1, 1926, sixteen months in all. During the first two months the traps were operated only on Saturday afternoons, Sundays, holidays, and from daylight to seven o'clock on about half of the remaining mornings. After January 1, 1925, they were ready to capture the visiting birds practically all of the time. For the whole period the traps were in operation 5,475 out of the 6,650 daylight hours, or 82.5 per cent of the time that birds, other than nocturnal birds, were about. Since the first two months the traps have been open 90.5 per cent of the possible trapping time. This gives a fair idea of the continuous nature of the work carried on at this station.

Of the 2,087 birds trapped and banded during this time, 1,169 were House Finches (*Carpodacus mexicanus frontalis*). These 1,169 House Finches were in the traps a total of 3,627 times, or an average of 3.1 times per bird, which is very much less than the 10.4 times per bird attained by the California Purple Finches in the early months of 1925 (see *The Condor*, xxvii, 1925, pp. 217-223).

The records of these birds were first posted from the daily journal to year by day sheets similar to the one shown in figure 58, in the article on Purple Finches referred to above. Here a circle was placed after each band number on each day that the bird wearing the band was caught. From these sheets and other information recorded in the journal, Table 1 herewith was compiled.

Table 1 (p. 255) gives for each month of the period the number of traps in use; the number of daylight hours during which birds might be expected in the traps; the number of daylight hours traps were in operation; the number of individual birds banded; the number of males banded; the number of females banded; the number of immature birds banded; the total number of repeats; the total number of captures; the number of individuals banded each month which did not repeat during the period; the number of individuals banded each month which repeated once, twice, three times, four times, five times, six times, seven times, eight times, nine times, ten times, and more than ten times during the period; and the number of individuals captured each month. This last row of figures might be called the trap census, by months of the House Finches at this station.

Some individuals were recorded as immature males or immature females and were counted as immature and as male or female in this tabulation. These were the birds that were in hand either at the time of the first molt or both before and after the first molt, thus establishing by their plumage the facts of their age and sex.

The 1,170th House Finch was in the traps on February 9 and 14, 1925, and had been banded on August 23, 1924, by Dr. Johnson at his home about three-quarters of a mile away.

Early in our observations of House Finches we began to feel the need of some standards of colors with which to compare the various males. We were referred to Ridgway's *Nomenclature of Colors*, but decided to try the scheme of plucking two or three feathers from each male bird that attracted attention, and keeping them to compare with other feathers taken from the same bird if caught again after a molt. The

Nov., 1926

STUDIES ON BANDED HOUSE FINCHES

TABLE 1.—HOUSE FINCHES BANDED, NOVEMBER, 1924, TO FEBRUARY, 1926, INCLUSIVE

	1924											1926					Totals
	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Number of traps in use.....	5	5	7	7	7	7	7	7	7	8	9	9	10	10	10	10	10
Number of daylight hours.....	370	370	380	360	430	450	490	490	500	480	430	420	370	370	380	360	6650
Number of hours of trapping.....	50	65	550	330	340	350	475	455	465	470	430	380	335	345	325	310	5475
Number of individuals banded.....	3	15	65	51	59	54	125	192	277	186	59	19	35	15	17	17	1169
Number of males banded.....	2	9	38	25	18	36	41	46	44	36	24	5	16	8	8	8	372
Number of females banded.....	1	6	27	26	21	18	35	35	37	22	26	14	19	7	9	6	309
Number of immatures banded.....	0	0	0	0	0	0	58	126	200	162	15	0	0	0	0	0	561
Total number of repeats.....	0	0	61	67	70	197	387	381	412	330	77	30	72	141	95	138	2458
Total number of captures.....	3	15	126	118	109	251	512	573	689	516	136	49	107	156	112	155	3627
Individuals not repeating.....	0	5	17	16	8	12	46	102	177	131	38	11	20	6	8	10	607
Individuals repeating only once.....	0	5	18	12	9	17	24	34	45	27	12	3	4	2	5	4	231
Individuals repeating only twice.....	0	0	6	2	8	8	12	20	15	10	5	1	3	6	2	1	99
Individuals repeating only three times.....	0	0	5	4	6	5	15	9	14	6	2	1	3	0	2	1	73
Individuals repeating only four times.....	0	1	4	2	1	2	7	5	10	6	0	1	2	0	0	1	42
Individuals repeating only five times.....	0	0	2	2	2	6	7	3	2	1	1	2	0	0	0	0	28
Individuals repeating only six times.....	1	1	4	1	0	0	4	5	2	0	0	0	0	0	0	0	18
Individuals repeating only seven times.....	1	1	2	0	1	1	2	3	0	0	0	0	1	0	0	0	12
Individuals repeating only eight times.....	0	1	1	2	2	0	1	1	3	1	0	0	0	0	0	0	12
Individuals repeating only nine times.....	0	0	0	0	0	1	3	1	2	0	0	2	0	0	0	0	9
Individuals repeating only ten times.....	1	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	7
Individuals repeating over ten times.....	0	1	6	5	2	1	5	5	4	2	0	0	0	0	0	0	31
Individuals captured each month.....	3	15	75	64	63	94	184	261	384	259	92	37	81	83	65	76	

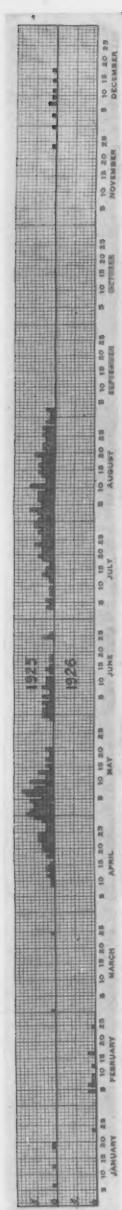


Fig. 79. Occurrence in traps of House Finch No. A-13855; ordinates show times in traps on each day.

feathers gathered in this way have not been completely mounted, so a complete report for the period cannot be given at this time. It has been learned, however, that one male which was yellow without any red before the molt in the fall of 1925, was red after that molt; and that one which was a bright red before that molt was much duller afterwards.

Only one of these 1,170 House Finches, a male wearing band number A-13855, stands out distinctly from all the rest because of the large number of times it has repeated. Beginning on January 7, 1925, it was in the traps 357 times up to March 1, 1926, and is still coming. It was in the traps four times in January, no times in February, twice in March, and then on April 9 it became a regular patron of the traps. From that date until May 21, inclusive, it was taken from the traps 125 times and missed only two of the 43 days of the period. Then after an absence of eight days it started again on May 30 and missed only two of the next 21 days, being taken from the traps 36 times. The next absence, from June 20 to July 3, inclusive, was broken by four visits to the traps, on June 25 and 26. Then from July 4 to September 3, inclusive, it missed being in the traps only three of the 62 days and was taken from the traps 165 times. It was not in hand again until November 24. It repeated once more in November, seven times in December, once in January and eleven times in February. The greatest number of repeats in one day was eight. Figure 79 is the occurrence diagram for this bird.

This bird learned to go into the Potter traps without dropping the door. Several times he was seen to hop over the treadle, help himself to the food and hop out again without dropping the door. There is no way of telling how many times he went in and out again safely. This trick almost resulted disastrously. Three times he was found held down to the bottom of the trap with the door resting across his neck. He had made a mis-step and had tripped the door on the way out. One time he was so far gone that he toppled over on the bottom of the trap when the door was raised, but he recovered immediately and sang his usual song when released.

This bird was a very pleasing little fellow. He often chirruped when in a trap as if he were asking to be let out. And when a hand was put in to take him, he fluttered around a little and then turned with his head toward the door, and allowed the hand to grasp him. Almost without exception he sang his full song as he flew away after being released.

In the late summer he could be distinguished from the other birds by his trap-worn plumage, so he was occasionally released, when in the cloverleaf traps alone, without being taken in hand. When in these traps with other birds, he was usually the first to go into the gathering cage, and then when the rest were in he would dash out into the trap before the door could be closed. Of course other birds perform this way sometimes, but A-13855 did it so consistently while visiting the traps so often that it seemed

he had learned to lead the other birds into the gathering cage, and then go back into the trap himself so he could be released without being handled.

In spite of the great number of times he has been in the traps, he seems to object to being handled more than some of the other House Finches. One male in particular, A-35435, was so tame it was difficult to drive him into a gathering cage and he fluttered very little when being taken in hand.

One interesting fact in connection with the repeat record of A-13855 is that after each of the two gaps when he did not come into the traps, one in late May and the other in late June and early July, he came to the traps again with a brood of young birds begging to be fed. These two absences from the traps were undoubtedly due to his abandoning the food offered in the traps for seeds in the milk with which all nestling House Finches are fed.

In closing we want to offer to Mr. Sprot and others (see *Condor*, xxvii, 1925, p. 230) some measure of assurance that trapping for banding purposes does not result in an undue number of bird fatalities. Here are the records of 1,170 House Finches. Of these, 48 per cent repeated at least once during the period of sixteen months. Counting time for each bird from the day it was banded, 37 per cent repeated after five days, 31 per cent after ten days, 25 per cent after one month, and 20 per cent after two months. Further details are given in Table 2.

TABLE 2.—NUMBER OF HOUSE FINCHES REPEATING AFTER VARIOUS LAPSES OF TIME, COUNTING FROM DATE EACH WAS BANDED

	Number	Per Cent
Total number banded.....	1,169	100
Total number repeating during period.....	562	48.1
Number repeating during first five days only.....	126	10.8
Number repeating after five days.....	436	37.3
Number repeating after ten days.....	366	31.3
Number repeating after one month.....	290	24.8
Number repeating after two months.....	236	20.2
Number repeating after three months.....	191	16.3
Number repeating after four months.....	149	12.7
Number repeating after six months.....	90	7.7
Number repeating after one year.....	8	.7

Only five House Finches were known to have been killed during the trapping and banding operations. Two of these were taken from a trap by a dog, two were killed by the hot sunshine while in a trap, and one was killed by flying against a window. About an equal number have been reported as "found dead" or "caught by cat" within a mile around. Aside from these, no deaths are known and there is no evidence whatever to indicate a single bird has been released and later died from injuries received in the traps. Neither does Mr. Sprot's article referred to above give any such evidence.

In answer to Mr. Sprot's last question, "Are we Bird Banding, or merely banding birds" let it be said that we, the banders, are banding birds or bird banding, it matters not which word is put first, for a serious purpose, the purpose of studying birds. In order to get the desired results from the purely banding work, birds and many birds must be banded, and because the operators of banding stations are sufficiently interested to band many birds is no reason to refer to them as "striving in a childish manner to band more than one's neighbor, or to beat some foolish record", or to assume that it is being done at the expense of bird life. Such is not the case.

What might be termed the supplementary side of the banding work probably is of the most importance, and the banders are taking advantage of the opportunity for study given them by such an abundance of live birds in hand.

Pasadena, California, April 9, 1926.

THE DISCOVERY OF THE NEST AND EGGS OF THE
WESTERN GOSHAWK IN CALIFORNIA

WITH TWO ILLUSTRATIONS

By MILTON S. RAY

WHILE on several occasions I had noted the Western Goshawk (*Astur atricapillus striatulus*) during the summer in the high Sierras, it was not until June 19, 1922, that I found my first nest of this species. We gained the higher altitudes of Eldorado County that year on June 4, at a time when the stage road, lying beneath deep snow, was still closed to general traffic. In a light buckboard, drawn by a powerful dray horse, Mr. Elmer Donckel and I, but only with considerable difficulty, succeeded in reaching the very summit of the pass.

A few days later in this region, at an elevation of about 6,300 feet, while slowly penetrating a dense forest of tamaracks that rose out of a boggy meadowland which was made almost impassable everywhere by fallen timber, I heard the loud, clear call of a Western Goshawk. Glancing above, I had but a fleeting glimpse of one of those graceful birds as it swept through the lofty, light-filtering pines and disappeared from view.

On June 19, in another part of this same forest, Mrs. Ray caught sight of a goshawk perched at the top of a lofty pine, whence it intermittently called, and where later it was joined by its mate. The cry of this hawk is a loud *keah, keah, kull, kull, kull*, in quick succession; sometimes it is limited to only the last three call notes. We now began an extended search, with both birds circling and screaming above and at times swooping uncomfortably close to our heads. At last, in a thickly timbered and very swampy section of the wood, twenty-five feet up in a rather small and slender tamarack, I located the nest. As I climbed the tree three small, white, downy young slowly, awkwardly and silently came to the edge of the nest and cautiously peered over its brink. On nearing the structure one of the parents almost brushed me with her wings as she dashed frantically by. The nest was a rough-looking affair, made entirely of small, smooth, uniform sized twigs, and it measured two and one-half feet across.

On May 19, 1923, I was again in the goshawk's forest. The former nest, however, was not in use and a most careful search for miles around revealed no trace of any other nest nor of the birds themselves. Early in May, 1924, Mr. Charles R. Young revisited the locality and found the birds occupying the original nest; but the latter already held three very small young.

At the beginning of the year 1925, Mr. Young and I determined that we would not allow the goshawks to elude us again through any lack of vigilance on our part. The first trip to the region was made on April 17, and while both birds were noted in the vicinity, the old nest was not looked into, as the pair remained in the air continuously.

On the 24th, the occupied nest was discovered in a new locality. It was placed against the trunk of a lodgepole pine, thirty-five feet up. The tree was about sixty-five feet in height and most of its lower branches were dead. The nest held a single, and apparently fresh, egg.

On the last day of the month after the parent had been seen on the nest for several days, the completed set of three very slightly incubated eggs was collected. All three eggs are unmarked, although one is very slightly stained by the green pine needles in the nest lining. The specimens are lichen green (Ridgway, *Color Standards and*

Nomenclature, plate no. 33) in color; they measure in inches: 2.25x1.75, 2.30x1.76, 2.31x1.70. This nest, like the one found previously, was located in the heart of a swampy forest of pines. Surrounding the nest tree were blackish, inhospitable pools of snow water, deep beds of pine needles, and thickets of fallen and standing dead timber. Ever there, below, was the dark, cool shade of the lofty pines and ever, above, the ceaseless roar of the wind in their swaying tops.



Fig. 80. NEST OF THE WESTERN GOSHAWK. The nest was placed against the trunk of a lodgepole pine, 35 feet up, in a dense forest of firs and pines. This nest contained the type set of eggs, for California, of this rare hawk.

The nest, a gray, weatherworn, ragged-looking structure, was oval in shape and measured, in inches, 20 by 33; the long side was placed against the trunk of the tree. By measuring, the odd projecting twigs gave it a size of 34 by 60. The cavity proper was 9 by 2, and a very rough, uneven affair it was, with its lining of green tamarack sprays, strips of tamarack bark, and a few scattered goshawk feathers. The nest distinctly tapered towards its almost flat top and was 29 inches in height (or 39 inches, counting certain projecting twigs). The composition was entirely of small, smooth, dead tamarack twigs and branches. Most of these were one-quarter inch in diameter,

some were three-quarters and some one-half, while a few were only one-eighth of an inch in diameter. I found, however, that the coarse-looking nest was very compactly built, and being supported by four branches of the tree and sheltered against the trunk, was well fitted to withstand the snow and gales that sweep through these altitudes in April and May.



Fig. 81. Encircling the foot of the tree that contained the Goshawk's nest was a complete ring of twigs dropped by the birds while engaged in nest-building. The extreme density of the forest is well shown in this illustration.

The two accompanying photographs (figs. 80, 81) well illustrate the nest and its location. Encircling the foot of the tree was a complete ring of twigs, dropped by the birds while engaged in nest-building. The lighting in the wood was so peculiar that I found that it was only possible to take a successful picture of the nest around 3 o'clock in the afternoon, at which time a weak, declining sun would peek through the chilly foliage for a short time.

As far as known, the Western Goshawk is the only form breeding in California, as the Eastern bird (*A. atricapillus atricapillus*), according to Dr. Joseph Grinnell, can only be considered a migrant. During past years, a number of our well-

known western ornithologists have located nests of this hawk, but all of these contained young. It is usually, of course, rather easy to find any nest of the larger raptors after it contains young birds, as the parents can be watched as they carry food to the juveniles. To locate a nest of the Western Goshawk while the birds are still sitting, however, is by no means a simple matter, for at such times these hawks are extremely wary; and in the dense forests they inhabit, the great lofty firs and pines stretch in endless succession in all directions as far as the eye can reach. But aside from this, there are two almost insurmountable difficulties that will always prevent many sets of this bird's eggs being taken in its thickly wooded alpine haunts: First, the lofty nesting sites selected, some of which are almost impossible to reach; and, secondly, and by far the most difficult, the great risk and hardship often necessary to gain, in late April or early May, the summer home of this hawk amid the storm-swept, snowy solitudes of the high Sierras.

In recording the discovery of the type set of eggs of this hawk for California it seems a fitting time to mention the nests containing young that have been found by other ornithologists. Grinnell and Storer, in their *Animal Life in the Yosemite*, record a nest found on June 22, 1915, in Yosemite National Park. This was placed in a red fir, approximately sixty feet up, and looking very difficult of access, the tree was not climbed. Mr. Henry W. Carriger informs me that he found a nest near Cisco, in Placer County, during June, 1918. This nest, sixty feet up in an almost limbless conifer, was also practically inaccessible and held large young.

James Moffitt writes me regarding this bird, as follows: "The enclosed notes cover observations over a period of fifteen years in the Tahoe region and from the paucity of same it can readily be seen that the Western Goshawk is a very scarce bird in this section." Mr. Moffitt's notes are as follows: "The Western Goshawk is a rare breeding species in the Canadian and Hudsonian zones, appearing about the shores of Lake Tahoe in the fall. An adult was seen near Tahoe City, August 3, 1919, and another was noted one mile south of Tahoe Tavern, October 14, 15, and 19, 1924. Another adult was seen in the woods bordering Rowlands Marsh, Lake Tahoe, October 23, 1925. Adult and young able to fly were noted August 7, 1919, near the head of General Creek, El Dorado County, elevation 7,000 feet. The young bird was shot and proved to be a female. A nest was found in a large fir, forty feet from the ground, saddled over the lowest limb of the tree and close to the trunk. This was in a dense red fir forest where conditions were typically of the Canadian zone. Efforts were made to reach the nesting site in the latter part of May, 1921, and again in 1923, but deep snow in the country and storms prevented. The nest was visited in early July, 1923, and showed evidences of having recently been occupied, but no birds were seen. In July, 1924, it was again visited and had apparently been occupied that season. On July 9, 1923, an adult was seen at Upper Velma Lake (elevation 8,000 feet), and from its behavior, I believe it had a nest in a heavy red fir forest nearby. R. M. Watson, who is familiar with this bird and who was with me when the nest above was found, states that a pair has bred near Antone Meadows at the head of Barton Creek (elevation 6,900 feet) for a number of years, nesting on a large red fir similar to the nesting site above described."

San Francisco, California, December 17, 1925.

THE VIOSCA PIGEON

By CHESTER C. LAMB

THE VIOSCA BAND-TAILED PIGEON (*Columba fasciata vioscae*) is a race peculiar to the southern tip of Lower California, Mexico. Band-tailed

Pigeons were first discovered there by John Xantus in 1859 or 1860, but it was not until William Brewster began making a systematic study of the birds of that region that it was found that the pigeons there are different from those of the Pacific coast area of the United States. Brewster described the bird (Auk, V, 1888, p. 86) with type taken by M. Abbott Frazar, May 30, 1887, at La Laguna, in the Victoria Mountains. The bird was named in honor of Mr. Viosca, then United States Consul at La Paz.

In general appearance the Viosca Pigeon is very much like its near relative, *C. fasciata fasciata*, which is so widely distributed on the Pacific coast, though not known to occur south of latitude 30°. The chief distinguishing mark between the two races is that the Viosca lacks the dark tail band, or at best this band is only faintly indicated; furthermore, the general color tone is slightly paler in the Cape form.

The Viosca Pigeon is, with one exception, known to occur only in the Victoria Mountains, sometimes known as the Sierra de la Laguna, or in the adjacent foothills. The exception is Brewster's (Bull. Mus. Comp. Zool., XLI, 1902, p. 77) statement that Mr. Frazar saw large numbers at San José del Cabo in September, "passing southward". During my own two years residence in the Cape district, however, this bird was not seen outside the mountainous district above indicated. I very much doubt the pigeons leaving Lower California at all, as implied by Brewster on Frazar's report.

I became acquainted with the Viosca Pigeon July 5, 1923, when I made my first trip to the Laguna Mountains, and in the next month found them abundant. The following year, parts of four months were spent in their range and I had ample opportunity to study and observe this isolated race of pigeon. It was common throughout the mountains, ranging from an altitude of 1500 feet to the tops, some 6500 feet. At the lower levels the birds are found in the canyons where wild grapes and another native fruit grow; but the type of country they like best, and their real home, is the live-oak region of the higher valleys and canyons. These birds are swift and powerful fliers and it would not take them long to travel for their food, either to the pinyon pines above or to the wild grapes and figs below, whenever they might wish to vary their acorn diet.

Acorns, wild grapes, pinyon nuts, and a sort of wild fig were, in my experience, their only foods in the summer. Their flesh was a real treat, regardless of what they ate. Unfortunately, I did not see the pigeons in the winter time, though I visited several localities from which other observers have recorded them. From other published records it seems these birds do have a tendency in winter to visit the lower hills of the Victoria Mountains and, to a slight degree, other nearby ranges.

At one of my camps in the Victoria Mountains, my work table was placed directly under a large live-oak tree which bore an abundant crop of acorns. This was a great attraction to the pigeons as well as to numerous Narrow-fronted Acorn-storing Woodpeckers. It was a marvel to me how such a large bird as a pigeon could alight in this tree, even on its slenderest branches, without the least audible flapping of its wings; often I would be unaware of a pigeon's presence until it was made known to me by the woodpeckers. The pigeons and woodpeckers, it appears, are inherent enemies. Let a pigeon alight in this tree, and if a woodpecker is near-by, the latter immediately, with

loud cries, sets upon and drives the pigeon away, which departs with a great flapping of wings. In no case have I seen a pigeon try to defend itself, and one was never seen to take the part of the aggressor. When attacked, a pigeon flies to a near-by tree and often, as soon as the woodpecker's back is turned, so to speak, the pigeon is back again in the oak tree, only to have the same thing happen again. It is lucky for the pigeons that woodpeckers are not always on guard, else they would get but few acorns.

The pigeons often hang head downward on a slender branch, reaching for acorns, and then there is some flapping of wings. They partake in equal numbers of the small and the large acorns, and also take them when they are quite green. My observation is that they get the acorns mostly in the trees; on but few occasions have I seen them feeding on the ground. Perhaps because of the pigeons and woodpeckers, but few nuts ever have a chance to reach the ground.

The first bird voices one hears in the early morning in the live-oak region are those of the Narrow-fronted Woodpeckers, closely followed by the Viosca Pigeons, whose mellow *whoo-whoo* (first note short, second long and slightly lower) sounds almost human, as if someone were trying to attract attention. From the specimens taken, I learned it was only the males that make this sound. At this time the birds perch upon some dead or bare limb, usually at some elevation. They are frequently seen fluttering spirally with short wing-beats or sailing slowly over some clearing, and then an entirely different note is uttered at short intervals, hard to describe, but which could be called a sort of hoarse, guttural croak, sounded for a sustained period.

I have never seen this bird in flocks except when a dozen or two were feeding in an oak tree. For a large bird, they have an uncanny way of hiding in the trees behind the smallest of limbs or bunches of leaves. Often I would notice but one pigeon in a tree, but upon my closer approach pigeon after pigeon, that I had not seen before, would fly out. They are not excessively wild.

Their nesting season is a lengthy one, but I have no way of knowing whether more than one brood is raised. Thayer (Condor, XI, 1909, p. 143) records them as nesting December 26. Nelson (Mem. Nat. Acad. Sci., XVI, 1921, p. 46) says they were nesting January 24, and Brewster (*loc. cit.*) reports that Belding found them nesting in February. Other observers have noted them as nesting in April and May, and I found both fresh eggs and large young during June, July, August and September. Contrary to the report cited by Brewster (*loc. cit.*) that "one to two" eggs are laid, in over twenty-five nests examined by me I never found more than one egg or one young in a nest. Both parents participate in incubating the eggs. The birds are close sitters, but when disturbed from the nest the sitting parent will fly to a nearby tree and remain quietly until the intruder leaves the nest.

The majority of the numerous nests I examined were in live-oak trees, usually situated on the forks of the larger horizontal limbs, and placed from 10 to 20 feet above the ground. Some nests were also found placed among the smaller branches and near their extremities, but this was exceptional. A very few nests were found in a small species of white-oak tree that grows on the hillsides. This oak is peculiar in that in the dry season the leaves turn brown and appear dead, but a few days after the first rain, the leaves gradually grow green again.

There are a few pine trees, mostly pinyons, scattered among the oaks in some parts, but only in one instance did I find a pigeon's nest in a pine. This was a well built nest six feet above the ground, against the trunk where a horizontal limb grew out. One nest was found on a frond of a leaning fan palm tree. The nest is as a rule carelessly made, of a few coarse twigs, with no nest lining.

Berkeley, California, July 22, 1926.

RANGE EXTENSIONS BY THE WESTERN ROBIN IN CALIFORNIA

By TRACY I. STORER

(Contribution from the Zoological Laboratory, College of Agriculture, University of California)

THE WESTERN ROBIN (*Planesticus migratorius propinquus*) has a normal breeding range which extends from southeastern British Columbia south to the Valley of Mexico. In California its nesting area involves most of the Boreal region of the state, from the lower edge of the yellow pine and coast redwood belts (Transition Zone) through to the upper limit of forest (Hudsonian Zone) in the Sierra Nevada. Geographically the breeding range extends the entire length of the Sierra Nevada and includes also the ranges of southern California. In the coast ranges the species had, up to 1915, been reported only as far south as Seaview and Cazadero, Sonoma County (Grinnell, *Pac. Coast Avifauna*, no. 11, 1915, p. 171). There were then no known breeding records for Marin County, the San Francisco peninsula, the adjacent Bay region, or the Transition Zone of Monterey County. It seems very unlikely that the presence of the Robin as a nesting species could have escaped the attention of the numerous keen-eyed observers who have worked those areas during the preceding three decades. The absence of records seems to be, in this instance, a case of dependable negative evidence. However, at the very time this negative statement was being prepared for publication, observations were being made to the contrary.

On May 31, 1915, an adult Robin was seen in San Francisco near the western portal of the Twin Peaks Tunnel, and on June 5 the same year another was observed near Strawberry Hill in Golden Gate Park. In 1916 Robins were seen near Chain of Lakes and near Sutro Heights, a pair with a nest at the latter place being the first definite record of nesting in the city (Squires, *Condor*, vol. 18, 1916, p. 170).

In April and May, 1916, eight or more nests of the Robin were found in Golden Gate Park. The birds were then stated to have been nesting in the Park since 1913 (Hansen, *Condor*, vol. 18, 1916, pp. 170-171; Ray, *ibid.*, p. 226). Continuance of the Robin as a breeding species in the Park is indicated by the finding of nests in trees of the Band Concourse there in 1919, 1923 and 1924 (Evermann, *Gull*, vol. 2, 1920, no. 1, p. 4; Mailliard, *ibid.*, vol. 6, 1924, no. 1, p. 3; vol. 7, 1925, no. 2, p. 3). Robins were noted in the Buffalo Paddocks of the Park on July 13, 1919 (Smith, *Gull*, vol. 1, 1919, no. 8, p. 4), and by the present writer in another part of San Francisco, namely on a lawn at Clay and Laguna streets, opposite Jefferson Square, on June 30, 1920.

The first record of a nest in Alameda County is by Mrs. Amelia S. Allen (*Condor*, vol. 19, 1917, p. 185), who found a Robin's nest in a deciduous oak on the grounds of the Claremont Country Club in north Oakland on May 15, 1917.

In 1920 Robins appeared on the University of California campus at Berkeley and remained there through the summer. Dates of record in my own notes range from July 15, when a spotted breasted young bird was seen in Faculty Glade, to August 11 when a female was noted incubating eggs in a nest in a eucalyptus tree at the side of the Greek Theatre. The next year (1921) Robins were seen in Berkeley on a number of occasions. April 30 in Faculty Glade is a date of record for a pair. Songs were heard in the vicinity of Piedmont Avenue and Stuart Street from May 1 to July 17. A brood was reported as having been reared in a streetside tree near the

latter locality. In 1922, the number of birds seemed to have increased both on the campus and in town. July 12 two adults were feeding young in a nest thirty feet above the ground in a California laurel along the north branch of Strawberry Creek on the University campus, near the President's house, while several fully fledged young were seen near-by in olive trees on the same date. Adult birds were then still in song. On May 9, 1922, in the hills three miles southeast of Berkeley, an adult Robin was seen carrying building material, and on June 9 the nest was found, in a Monterey cypress, with an adult feeding two (or three) young. My records for Berkeley in 1923 are imperfect, but the birds were in song on the campus and in town on May 13. In 1924 an isolated observation on June 1 marked the birds as fairly common in town that year. That the Robin may have arrived at Berkeley as a summering species prior to 1920 is suggested by two entries on a classroom migration chart kept at the Museum of Vertebrate Zoology. These records (authority not known) are for August 14, 1917, and September 16, 1918.

While passing through the city of Napa on August 27, 1922, several Robins were seen in one of the city parks, and as this date seems too early for migrants or winter visitants it would suggest the presence of the Robin as a breeding species there. In 1924 Robins were heard in song in Pleasant Valley, Solano County, between Winters and Vacaville, on May 22.

The earliest nesting record for the Robin in the San Joaquin Valley is that by van Rossem (Condor, vol. 22, 1920, p. 39) who found many adults and two nests at Visalia in the summer of 1919. Recently, while in the San Joaquin Valley, I heard Robins in song at Tulare and in Roeding Park, Fresno, on May 30, 1916. One adult bird was seen at the latter place. Mr. John G. Tyler informs me that Robins are present permanently (that is, breeding) at several places south of the San Joaquin River. In August, 1925, he encountered a group of Robins, apparently a pair with its brood, in some oak trees in a pasture near an orchard. A nest, evidently used that season, was found in an oak tree. Messrs. Walter and William Richardson of Porterville, Tulare County, inform me that the Robin is a nesting species at Porterville and has been present there as such for "about six years" (thus since 1920 or 1921). Adult birds have been seen foraging for insects on the ground beneath orange trees where the soil is moist as a result of irrigation. According to Mr. Harry J. Snook (MS) the Robin is now present in summer at Stockton, San Joaquin County, in small numbers.

In July, 1924, a visit to Capitol Park, Sacramento, disclosed the presence of Robins in some numbers. To learn the past history of the species there, I consulted Mr. W. Vortriede, chief gardener of the Capitol grounds, who has his office in the park. He stated that Robins were established as breeding birds in the park when he came there in 1911 and that they have nested there every year since that time. Mr. H. G. Carnie of Sacramento told me that Robins were nesting about his residence in the southeastern part of Sacramento in 1925. Possibly Robins nest elsewhere in the Sacramento Valley and in other lowland localities in California, but this remains to be ascertained.

The general summer range of the Robin (as a species, as well as of the western subspecies, *propinquus*) everywhere includes territory where there is moist grassland (or its equivalent) in which this "soft-billed" bird can find soft-bodied insect larvae or earthworms as food for itself and young during nesting time. This seems to be a prime requirement of the Robin. The original "natural" range of the Western Robin in California included only those parts of the State where damp meadows, with short grass in which the adults might seek their forage, persisted during the summer months. These areas vary from a few hundred square feet of grassland, as along the banks of small creeks, to large level tracts in the high Sierra Nevada, sometimes embracing

several square miles of continuous grassland. The number of birds present in any given place usually seems to be proportional to the amount of such forage surface available. Nests may be close together at the margin of a forest bordering an extensive meadow. Territorial rights thus involve forage range rather than actual nesting sites, a condition somewhat akin to that postulated for seabirds by Howard (Territory in Bird Life, 1920).

In the natural breeding range of the Robin in California, the moisture (which permits of the persistence of green grass during the summer months) is maintained in several ways. In the higher mountains the meadowlands are chiefly filled lake basins with a high water table. Slopes adjacent to mountain masses out of which water slowly percolates during the summer months constitute another sort of location for permanent grassland. In the northwestern coastal portion of California frequent summer fogs reduce the daily evaporation rate in or close to the redwood belt so that the grassland continues soft and green for most of the summer period. The absence of the Robin from the lowlands and deserts of California during the summer season seems to be conditioned by the ecologic factor of lack of a suitable food supply, and this in turn is evidently controlled by conditions of moisture.

The several places mentioned above as new localities for the nesting of the Robin have been made suitable for the bird by the work of man and most of them will continue to be suitable only so long as human effort continues to add a bounteous summer supply of water to the scant natural moisture of that season. Originally, Golden Gate Park was an area of shifting sand, with scattered lupine bushes and low sand-inhabiting plants, suited chiefly to the needs of Nuttall Sparrows, ere human effort bound down the sand with grass and planted trees as windbreaks, bringing in at the same time an additional supply of water to keep the soil moist (and hence the lawns green) during the summer season. The lower hill slopes of Berkeley and Oakland originally supported a cover of grass, dry during the long summer months, and then inhabited, in the neighborhood of trees, by California Jays and Brown Towhees. The flat plains lands on which the cities of Napa, Sacramento, Fresno and Visalia now stand once were covered in summer with parched grasses in which lived Meadowlarks, Horned Larks and Burrowing Owls. No "soft-billed" bird like the Robin, accustomed to a diet of soft-bodied insects and worms, could have found food for itself and young during the midsummer period of scanty moisture in any of these areas. In that season of the year, most ground-dwelling insects are in the drought-resistant adult stage, less likely to fall victim to the stalking Robin. But with the development of lawns, with continued moisture supply and "green feed", various species of insects are able to persist there as larvae during the summer season. With irrigation, earthworms also are able to live up near the surface of the soil when normally they would be aestivating in deep burrows to avoid desiccation.

An interesting side issue of the Robin situation in Capitol Park was told to me by Mr. Vortriede. The Robins there frequently use palm trees (!) as nesting sites, and in the earlier years they brought off their broods successfully, without interference by cats from the adjacent city, as the cats could not or did not climb the palms. But about 1921 some Fox Squirrels were brought in by the Superintendent of Grounds and liberated in the Park. The squirrels were able to negotiate the palm trees, with the result that the Robins (and other birds as well) suffered a diminution in numbers through attacks at nesting time. Now (1925) the squirrels are overfed (by visitors) and are believed not to be breeding; furthermore, the squirrels wander off into the city, the many large streetside trees of Sacramento facilitating such movement by an arboreal

species, and such squirrels are apt to be killed by various agencies. Thus a return to former conditions, so far as the Robins and other birds are concerned, may take place provided no additional introductions of squirrels are made.

The Robin, then, is extending its range locally in California, as man provides new areas suitable for the summer forage habits of the species. The actual temperature cycle of the summer months seems to have little to do with this spread, as the heat cycle of Sacramento and Visalia is very different from that of San Francisco and Berkeley. It might be thought that the extensive area of lawn in Capitol Park, Sacramento, had resulted in a material decrease in temperature and that this, of itself, would form an environment more suited to the Robin. But a comparison of daily temperature records taken right in the Park with a thermometer located not over five feet above the actual lawns on which the Robins forage, compared with a similar record at Davis, Yolo County, fifteen miles to the west, where there is much less greenery and fewer trees (and where Robins do not now nest) shows no significant departure in favor of the Park.

Other species than the Robin are profiting by man's alteration of the region about San Francisco Bay. Of course some species, unsuited to continuance in a thickly settled region, have retired, but there has been a compensating increase or arrival of others. The Point Pinos (?) Junco at Oakland and Berkeley, the Tawny (?) Creeper at Berkeley, and the Olive-sided Flycatcher at Berkeley are all believed to be species which have moved in and occupied territory not previously held by those birds. The change in these cases is undoubtedly due to afforestation. Several species in Golden Gate Park have increased greatly in numbers as a result of the development of the lawns, shrubbery and trees in the Park, but these species were, in all probability, present either in the Park proper or close by and have merely moved in by the slow spread resulting from the annual increment of young. The California Quail, Allen Hummingbird, Nuttall Sparrow and Santa Cruz Chickadee belong in this category. It seems not unlikely that other species in the category of the Robin may arrive subsequently and some of these should be watched for. At Berkeley the Chipping Sparrow and Santa Cruz Chickadee are likely candidates.

Davis, California, June 1, 1926.

A FORM OF RECORD FOR AMATEUR ORNITHOLOGISTS
WITH ONE ILLUSTRATION
By ROBERT S. WOODS

TO those of us who are of a statistical turn of mind, one of the greatest pleasures to be found in the field study of natural history consists in the keeping of some sort of systematic record of our observations, whether we be at home or on vacation trips. If some concise and readily understandable form is adopted, it is conceivable that such records may be not only a source of satisfaction to their makers, but of permanent value as an indication of conditions at the time they were made.

Complete periodical lists of observed species may become a burden by their repetition, while the resulting voluminosity discourages their use for reference purposes. What seems to be needed, in addition to running field notes, is a means by which one may have available in compact form all of the more important statistical data which he has gathered in his previous observation of any particular species. For this purpose

Lanius ludovicianus

2. <i>gambeli</i>	✓	06.03 05.08	11.08 09.06	06.06 05.05	06.06 05.05	08.07 05.07	10.07 07.07	05.04 07.04	Val.
5. " "		07.06 05.07	07.05 05.19			05 04.05		05 04	Val.
3. <i>anthonyi</i>			06						Sta. Cat.
6. <i>excubitorides</i>		14 12	10.12 16.13			21 14			Des. - Cult.
8. " "				25					Val.

Fig. 82. Example of author's record cards, used for tabulating statistical data obtained in field studies of individual species.

a card system has important advantages, in that it is capable of unlimited expansion, mistakes are easily rectified, additional cards may be inserted in their proper places, and it permits of rearrangement at any time in accordance with the latest styles in classification.

Never having had the benefit of suggestions from more experienced ornithologists, the writer has developed through various evolutionary steps a form of record which is here illustrated and described, not as the best possible form, but as one which seems to embody the features desired by the writer personally. Standard four by six inch ruled record cards are used, with the addition of the vertical lines on the face and, preferably, plain ruling on the back also. Five by eight inch cards can be obtained if

a larger size is required. At the top of the card is written the name of the species (binomial), leaving room at each side for the notation of possible changes in nomenclature.

If a list of species is to be informative, it must be limited to a definitely outlined region. The location and extent of such regions will depend on individual circumstances, but in a country of varied topography their limits should be determined by physical features rather than by arbitrary political boundaries, and their area should be so limited as to include but one set of geographical races. Those in which extensive observations are made should be designated by number or letter and described on an index card. In the example here shown (fig. 82) the regional numbers are set down in the column at the left-hand margin of the card. Region No. 2 includes that part of the mainland of Los Angeles County south of the Mojave Desert, southeastern Ventura County, the southwestern corner of San Bernardino County, including the San Bernardino Mountains, the western end of Riverside County, including the San Jacinto Mountains, and all of Orange County. If one wished to enlarge this region, it could logically be extended farther up and down the coast, but not to the north or east, beyond the mountain barriers. Region No. 5 is the San Francisco Bay district, No. 3 the Santa Barbara Islands, No. 6 the Antelope Valley and Mojave Desert, and No. 8 is southeastern Arizona.

The grouping of all geographical races together on one card not only makes for convenience and economy of space, but renders it possible to ignore the third term of the trinomial when the status is undecided or when two or more subspecies not readily distinguishable in the field occur together in migration or on winter range.

Following the name of the subspecies there are twelve divisions for the months of the year, within which are recorded the first two years in which the species was observed in each region for each month. It is assumed that when a species has been seen in the same month for two different years it must be of normal occurrence during that month, but, if desired, space for a larger number of years could be provided. If the month and year in which a species was first seen in a given region are known, it is convenient to enter it in red ink (or underlined, as in fig. 82), and to distinguish in the same way the last entry when the spaces are all filled. Some idea of relative abundance is usually afforded by the elapsed time between records. The division of the year into quarters by heavier lines facilitates the location of the proper spaces without the necessity of a heading.

At the right is a space for indicating the nature of the habitat. The Los Angeles region, for example, can be subdivided into coast, salt marsh, lagoons and lakes, lowlands, cities, valley (in general), oak regions, wash, canyons, foothills, Transition and Canadian zones, etc., using more specific designations for localized species. Region No. 6, the Mojave Desert, requires fewer divisions; towns, cultivated land, reservoirs, desert, uplands and hills will probably cover the greater part of it.

The back of the card can be used for recording early and late migration dates, nesting data, times of unusual abundance or any other items of permanent interest. If extensive field notes are kept, reference to book and page numbers might be entered on the card.

As the title of the article indicates, this form is designed primarily for those who pursue the study of ornithology as an avocation merely; hence the writer trusts that its limitations from a technical standpoint will not be too severely criticized.

Los Angeles, California, May 29, 1926.

FROM FIELD AND STUDY

Misapplied Perseverance.—On the west porch of our house in Colorado Springs is an awning, extending along the front for fifteen feet. This is taken down every fall and put up again in the spring. It is the ordinary type of awning on an iron frame which can be pulled up against the side of the house by cords. By an odd coincidence it was put up for the season in 1924, and again in 1926, each time on the 5th of May. House Sparrows (*Passer domesticus*) seem to think this is put up for their convenience as a roosting place at night, and they sometimes attempt to nest in it. This note deals with two of these attempts.

The first was in 1924. My notes of May 24 say that for several days previously, perhaps two weeks, sparrows had been trying to build a nest in this awning, and that I had dumped the nearly finished nests two or three times by letting down the awning. It should be stated that this is not done daily at this season. On the 23rd, when the awning was dropped, there was a nest with three fresh eggs. Evidently the awning had not been down for several days. The morning of the 24th a broken egg was found on a step below the awning. Apparently the bird had had nowhere else to go and had laid it in the awning. The afternoon of the 25th another half-completed nest was dumped, and on the 26th I saw the birds carrying nesting material to the place. A nearly completed nest was dropped out on the 28th. On June 2 I destroyed another nest, with three fresh eggs, in the awning. This nest must have been built in a great hurry, or the bird must have begun to lay before it was completed; for the first egg could have been laid not later than the 31st, with the rest laid at the rate of one egg a day. This did not give much more than two days for the building of the new nest. On June 4 another nest had been begun, and on the 6th still another almost completed one was destroyed. On the 7th there was a little nesting material on the awning, and a practically completed nest was destroyed on the 10th. A fresh egg of a sparrow was found on the lawn in front of the house on the 13th; this possibly had been dropped by the same bird which had been trying to nest. There was nothing doing for some time after this, but on the 22nd more dry grass fell when the awning dropped. Apparently the birds were trying it again. We went away for the summer a day or two after this, and the house was rented. I do not know if the tenants had any trouble with the birds.

We had no trouble in 1925. We were in the house until the middle of June, and then went away. In the spring of 1926 the sparrows made no attempt to build in the awning; but about the first of August, or before that date, a pair began to nest there, despite the fact that the awning was dropped early every afternoon and usually remained down until after six o'clock. On the 2nd two eggs fell out and were of course broken. It is something of a puzzle as to when those two eggs were laid—one possibly the night before and the other the next morning, unless there were two females. Another egg fell out on the fourth. A nest had been started on the fifth, and this seems to have been the last attempt, for there was nothing more after that date. A broken egg was found on the walk in front of the house at this time. The various nests were constructed of grass and straws, and those nearest completion would have some feathers in them.

One cannot help admiring the perseverance of these birds in trying to nest under such adverse conditions, but in both years it seems to have taken some little time to show them how futile were their efforts. They had to have a lot of experience to teach them.—EDWARD R. WARREN, *Colorado Springs, Colorado, August 17, 1926.*

A Southern Race of the Fan-tailed Warbler¹.—A series of fan-tailed warblers collected by the junior writer in Salvador in 1925 and 1926 differs in several respects from *Euthlypis lachrymosa lachrymosa* Cabanis of southern Mexico and from *Euthlypis lachrymosa tephra* Ridgway of northwestern Mexico. These southern Pacific coast birds are characterized as follows:

Euthlypis lachrymosa schistacea, subsp. nov.
Southern Fan-tailed Warbler

Type.—Male adult; no. 17,404, collection of Donald R. Dickey; Pine Peaks, Volcan Conchagua, Salvador; altitude 3,000 feet; February 27, 1926; collected by A. J. van Rossem; original no. 10,478.

¹ Contribution from the California Institute of Technology.

Subspecific characters.—Similar to *Euthlypis lachrymosa lachrymosa* Cabanis, but dorsally clearer, purer slate color, particularly on rump and upper tail coverts; remiges and rectrices darker slate, sometimes slate-black; under parts with yellow of throat and abdomen more extensive and brighter (more lemon, less tawny) yellow, and in much more decided contrast to tawny of breast.

Range.—Pacific coast of Central America from Chiapas (?) south to Salvador and probably to Ometepe, Nicaragua.

Remarks.—*Schistacea* is the clear slaty extreme of the species, with contrasted under parts; *lachrymosa* occupies an intermediate position in characters as well as geographically; while *tephra* is the palest, most olivaceous race, with under parts least contrasted. The supposed slight differences in size between *lachrymosa* and *tephra* seem to be too intangible to have any diagnostic value in the series examined. The Guererro specimen is not typical of any race, but seems nearest to *lachrymosa*.

Specimens examined.—*Euthlypis lachrymosa lachrymosa*: Mexico: Vera Cruz: Motzorango, 1; Orizaba, 1; Mirador, 1; Oaxaca: Pluma, 1; Guerrero: Acahuizotla, 1; Tamaulipas: Santa Leonor, 1. *Euthlypis lachrymosa tephra*: Sinaloa: Mazatlan, 1; Rio Mazatlan, 1; Chihuahua: Hacienda San Rafael, 7; Jalisco: Barranca Ibarra, 2. *Euthlypis lachrymosa schistacea*: Salvador: Volcan Conchagua, 4; Volcan San Miguel, 2; Colinas de Jucuaran, 5; Lake Olomega, 5; Volcan Sociedad, 4; Mt. Cacaguatique, 7; Guatemala: Barranco Hondo, 1; Mexico: Chiapas: Tuxtla, 2 (not typical).

We are indebted to the Museum of Comparative Zoology, the Field Museum, the United States Bureau of Biological Survey, and to the United States National Museum, for the loan of necessary comparison material.—DONALD R. DICKEY and A. J. VAN ROSSEM, Pasadena, California, August 28, 1926.

Observations in the San Francisco Bay Region.—During the past spring for the first time I had an opportunity to study and collect birds about San Francisco Bay. On April 28, 1926, while on the tide flats at Albany, Alameda County, I collected a Sabine Gull (*Xema sabini*), and the next day, about a mile north of this point, I secured another. Both of these birds were males and they were in company with Bonaparte Gulls. Although many trips were made to these tide flats these were the only Sabine Gulls seen. Dr. Grinnell advises me that this gull is of uncommon occurrence in this region.

On April 29, I secured a male Red Phalarope (*Phalaropus fulicarius*), this being the only bird of this species observed. Shore-birds, especially Western Sandpipers and Long-billed Dowitchers, were fairly numerous during the latter half of April. Hudsonian Curlews, Red-backed Sandpipers and Semipalmated Plover were common also. The birds appeared to be at the height of their migration between the 20th and 25th of April. After that their numbers diminished rapidly, and by the end of the first week of May only a few were to be seen on the tide flats.

April 17 to 20 was spent at the ocean beach a short distance north of Point Reyes, Marin County. The beach at this place is very sandy, the sand extending far back from the shore. Here the first shore bird I met with was the Sanderling (*Crocethia alba*). Flocks of them were feeding along the beach close to the water. As each wave receded they would run in close pursuit of it, hurriedly picking here and there at the food particles that it left on the sand. As the next wave advanced they ran up the beach just ahead of it, lingering as long as possible without being engulfed by it.

I also found the Snowy Plover (*Charadrius nivosus*) here, and on April 19 was so fortunate as to find a nest of this species containing three eggs. The eggs were deposited in a slight depression in the sand, close to a small piece of driftwood and about 200 yards from the water. I am reliably informed that this is the first nesting record of the Snowy Plover for this vicinity.

About a mile from my camp here I found a colony of Tri-colored Blackbirds (*Agelaius tricolor*) building their nests in a dense growth of raspberry brush. None of the nests was completed at that time.—E. J. BOOTH, Bellingham, Washington, September 1, 1926.

Weasel and Birds.—Recently, while walking along a foothill road within the city limits of Riverside, my path was suddenly crossed by a California Weasel (*Mustela xanthonotus*) running at a rapid pace. Closely pursuing it in the air were a female

Valley Quail (*Lophortyx californica vallicola*) and an English Sparrow (*Passer domesticus*). The birds, seemingly in close coöperation, chased the weasel across a weed-covered city lot, across a street and up to a garden wall, where they were frightened by the sight of a negro beating rugs on a lawn. It certainly seemed strange to see birds of such different type and temperament combining their efforts against their mustelid foe. The quail may have had a clutch of eggs on the ground or young to protect, but why was the English Sparrow interested?—EDMUND C. JAEGER, *Riverside Junior College, Riverside, California, August 26, 1926.*

A Three-cornered Fight.—I was camping in a pine forest not many miles from Reserve, New Mexico, accompanied by a small English terrier. In front of my tent stood a large dead pine, near the top of which there were a number of holes, evidently the homes of four pairs of Ant-eating Woodpeckers (*Balanophyra formicivora aculeata*). A gray, tassel-eared squirrel came scampering along, and was at once spied by the dog, which gave chase. The squirrel ran up the dead tree mentioned above, to be instantly assailed by the Woodpeckers. Their constant cries and their sharp bills made things so uncomfortable for the squirrel that it ran down the tree to within a few feet of the dog, who sent him scampering to the top again with his eight antagonists constantly flaying him.

About this time there was a swish of wings, and a Sharp-shinned Hawk (*Accipiter velox*) darted like a streak among the Woodpeckers. For an instant it seemed that one of them was doomed, but by a small margin it managed to escape, and in an instant they had all darted to cover among the green boughs of surrounding trees. All was quiet for a few brief seconds, when the Woodpeckers returned to the attack, except one which perched on the topmost bough of a near-by tree, as guard or lookout, watching for the hawk. The other seven took up the fight with the squirrel.

In a few minutes the hawk again appeared on the scene, the guard gave a shrill call of warning, and all the Woodpeckers were under cover before their enemy could reach them. The hawk, then, finding the birds on their guard, left and did not return. The terrier soon abandoned the tree, and the squirrel hurried down and scampered away; the Woodpeckers quickly quieted down and went peacefully about their home affairs. I believe that the birds recognized in the squirrel a danger to their eggs or young.—ED. S. STEELE, *Reserve, New Mexico, August 28, 1926.*

EDITORIAL NOTES AND NEWS

THE OTTAWA MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION.—The first meeting of the A. O. U. ever held outside of the United States convened October 12-14 in Ottawa. Despite its being held on "foreign" soil, this meeting proved to be almost the best ever held, in point of total attendance as well as in general interest manifested. This development showed the extreme cordiality of feeling which obtains between the two countries, as evidenced in part by the wonderfully warm reception accorded by the Canadians, in part by the large measure of attendance from all parts of the United States.

The Victoria Memorial Museum at Ottawa served as headquarters for the meeting. Here thoroughly comfortable rooms were available for the daily sessions; and the elegant Chateau Laurier provided for

the social features. The thoroughness with which local arrangements had been worked out set a new standard. And for this success the local committee in charge, Mr. Hoyes Lloyd as secretary, should be accorded full credit.

The upwards of 200 in attendance included more far-westerners by double than heretofore in the history of the Union. Evidently westerners thought of Ottawa as really a western point of meeting, as compared with the usual Atlantic coast cities. One of the original founders of the Union was present, Mr. Chas. F. Batchelder of Cambridge. An Antipodean delegate it was a pleasure to meet was Mr. W. B. Alexander, until lately Editor of the Australian *Emu*. There were naturally many others in attendance for the first time, from the various Canadian provinces.

The Canadian Government itself, through its Minister of Mines, Hon. Chas. S. Stewart, participated actively in the entertainment of the Union. Each member as he registered on the opening day was presented, with the compliments of the Minister of Mines, an autographed copy of Taverner's sumptuous new volume on the "Birds of Western Canada"—a lasting memento of the Ottawa meeting.

The art exhibit, housed in a wing of the Museum for this occasion, was worldwide in its representation. Besides the work of practically all active American artists there were pieces by Joseph Wolf, the father of accurate bird portraiture, loaned by Dame Alice Godman; also pieces by Lodge, Millais, Larsen (of Denmark), and Liljefors (of Sweden). The exhibit of Ridwayiana, including many original drawings, was extensive and of great interest. A further exhibit was a very effective one relating to the history and personnel of Canadian ornithology.

The business session of the Union occupied an entire day and evening. Perhaps the most important items of business transacted included the formal launching of the Ridgway Memorial movement. Then the report of progress of the work upon the new Check-list, presented by Dr. Stone, and the authorization of the printing of the ten-year index to *The Auk*, were accomplishments of moment. New officers elected included, for President, Alexander Wetmore; Vice-presidents, J. Grinnell and J. H. Fleming; Secretary, T. S. Palmer; Treasurer, W. L. McAtee. There was no vacancy in the class of Fellows. New members elected were: May Thacher Cooke, Maunsell S. Crosby, Stanley G. Jewett, William H. Mousley, and J. A. Munro.

The regularly scheduled program comprised 57 numbers, representing practically all fields of ornithology. During much of the three days devoted to this program, double sessions were held, the more popular papers being presented simultaneously with the technical ones in a separate part of the building. It is, of course, very hard to say which were the most noteworthy contributions. That by Harrison F. Lewis, describing the eiderdown industry newly developing in Quebec, proved of wide interest. As to the movies, perhaps the most novel one was Owen J. Gromme's, showing the nesting behavior of the Loon. Of the technical papers, Robert C. Murphy's report on "A Study of Adaptation among the Tubinares" was particularly suggestive. The

animated impromptu discussion of this and many other papers furnished a valuable feature of the program.

At the annual dinner our Canadian colleagues presented an entertainment of rare humor, long to be remembered. And, of course, the regular issue of the *Auklet* made its appearance as the evening progressed. A miniature of the Great Auk appeared as one of the table favors at each of the 200 places. A serious note during the dinner was struck when formal presentation was made to Major Allan Brooks of a medal in recognition of his eminence as a bird illustrator.

Throughout the sessions, the collections in the Division of Ornithology of the Victoria Museum, rich most especially in water birds, were kept fully open for examination by visitors. There was a pleasing lack of restraint in this regard, so that the fullest opportunity was enjoyed by the systematically inclined for profiting by the chance to study the extensive series of Canadian birds there available.

Making toward a real spirit of welcome was an unique piece of modeling which surmounted the stair-head in the entrance hall of the Museum. This, the work of Mr. P. A. Taverner and his assistants, was a huge Great Auk standing on three volumes (the A. O. U. *Check-list*, the A. O. U. *Code*, and *The Auk*); and below this was enthroned a jeering Auklet straddling the world! The whole thing was done in a fine spirit of humor and originality.

At the conclusion of the regular program, three days were devoted to excursions afield under the guidance of local bird-students. These were largely attended, by reason of the favorable weather; and long will be the memory, on the part at least of Californians, of the brilliant display of autumnal foliage in the beautiful Ottawa Valley and among the Laurentian Hills.—J. GRINNELL.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

JULY.—The Southern Division of the Cooper Ornithological Club held its regular meeting Tuesday evening, July 27, 1926, at the Los Angeles Museum, Exposition Park; twenty-five members and friends were present. In the absence of the president and vice-president, Mr. Howard Robertson was called on to act as chairman. Minutes of the June meeting were read and approved. Through over-

sight, the secretary failed to have on hand June minutes of the Northern Division. The name of Thomas Tonkin McCabe, Indianpoint Lake, Barkerville, B. C., Canada, was proposed by Harold Michener.

Dr. Spencer W. Atkinson presented some unusual slides of animals, most of which were taken by flashlight at his home in Altadena, not far from the Mt. Wilson toll gate. California striped skunk, fox, possum and others were shown, among them quite a remarkable picture of the skunk in the act of using his well-known weapon of offense. A series of pictures of Anna Hummingbirds in the nest showed the rapid development of the nestlings.

Following Dr. Atkinson's talk, Mr. Wyman put on a number of slides of prehistoric animals, first some comics, then skeletons and the restored animals.

Adjourned.—ELLA H. ELLIS, *Secretary pro tem.*

NORTHERN DIVISION

JUNE.—The June meeting of the Cooper Ornithological Club, Northern Division, was held on Thursday afternoon, June 17, 1926, at two o'clock at Mills College, California, in affiliation with the Pacific Division of the American Association for the Advancement of Science. President Amelia S. Allen presided, and forty members and guests were present. The reading of all minutes was omitted. The first paper of the afternoon was read by Mr. Ralph Hoffmann, upon "Courtship Performances of Birds". Mr. Hoffmann has recently spent much time in the field, and he presented to his hearers many original facts concerning the spring activities of the following thirteen birds: Western Grebe, Pigeon Guillemot, Black Tern, Forster Tern, Beal Petrel, Ruddy Duck, Wilson Phalarope, Wilson Snipe, Sage Grouse, Marsh Hawk, Texas Nighthawk, Three-toed Woodpecker, and Sage Thrasher.

Dr. Tracy Storer's paper was upon "Range Extension by the Western Robin." A definition of the former range of the robin in California, supplemented by records taken during the last ten years, showed a very decided increase in summer range. A review of conditions necessary for the successful rearing of broods of young robins pointed, according to Dr. Storer, toward the increased area of well-watered lawns in city parks and private gardens as the main factor concerned in the increased summer population, since robins nest always by preference near damp meadows containing an abundance of soft food for the young.

At the close of the program, a brief business meeting was held at which the following names were proposed for membership: Mary E. Bulkley, Box 474, Carmel, California, sponsored by J. Grinnell; Mrs. Addie Houghton Freeborn, 2327 Warring St., Berkeley, California, by Tracy I. Storer; Ralph Ruskin Huestis, University of Oregon, Eugene, Oregon, by J. Grinnell.

Adjourned.—HILDA W. GRINNELL, *Secretary.*

JULY.—The July meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology, Berkeley, on July 22, 1926, at 8 p. m. President Allen presided with thirty-five members and guests in attendance. Minutes of the Northern Division for June were read and approved. Minutes of the Southern Division for June were read. The following names were proposed for membership: Raymond M. Gilmore, 1227 Bonita Ave., Berkeley, by Chester C. Lamb; and Ansel W. Robison, 1072 Market St., San Francisco, by H. S. Swarth.

Mr. Swarth contributed two book reviews, commending to his hearers Jonathan Dwight's "Gulls of the World", which contains painstaking descriptions of all the known plumages of the many species of gulls, and "A Monograph of the Pheasants of Japan" by Nagamichi Kuroda, notable for its artistic merits.

The talk of the evening was by Mr. Chester C. Lamb upon his recent three months trip down the gulf side of Lower California. He told in a realistic way of the tribulations of the road, tribulations encountered by fish trucks as well as museum Fords, and of the steepness and ruggedness of the San Pedro Martirs. He listed the birds found on the gulf shore and then those of the interior desert, and he told of a literal rain of birds following a heavy storm during the migration season. The creosote bushes seemed alive with bird individuals, and nineteen species not hitherto seen were noted.

A short paper on "Tree Surgery and the Birds" was read by Mr. Grinnell, who had watched favorite bird perches in the oak tree outside his office window disappear under the ministrations of "tree surgeons".

After the formal adjournment of the meeting, members lingered to look over the books reviewed and to study the trays of birds referred to by Mr. Lamb in his talk. Adjourned.—HILDA W. GRINNELL, *Secretary.*

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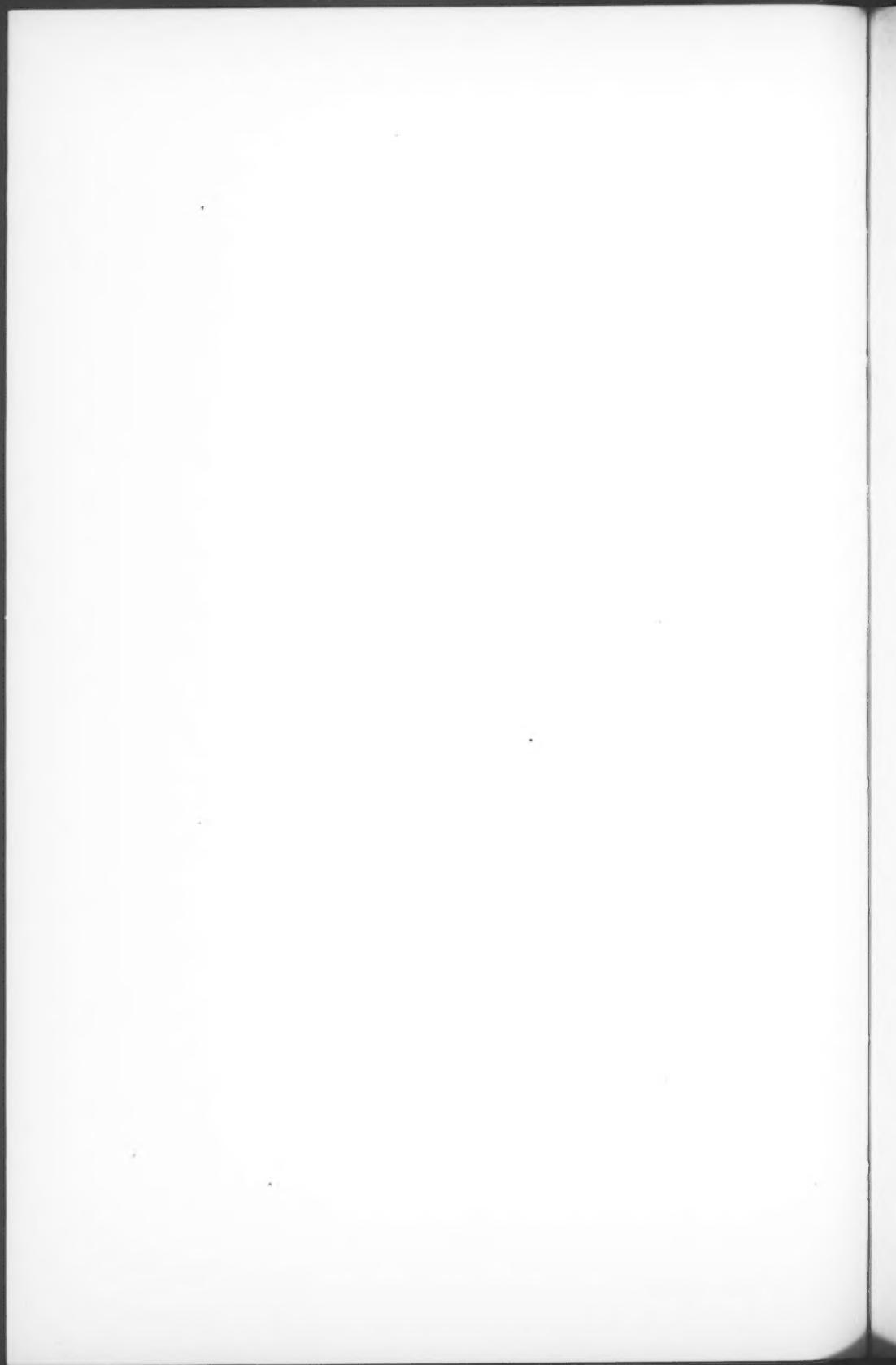
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